

PROPOSED REVISIONS TO CIRCULAR DEQ 4 2002 EDITION

CHAPTER 4 SITE MODIFICATIONS

- 4.3.3.2 ~~Fill must be of suitable depth to provide the minimum separation distances from the finished ground surface to a limiting layer. Fill may be used only in areas where there is four feet of separation distance from the natural ground surface to a limiting layer.~~ Fill cannot be used to overcome minimum vertical or horizontal separation distances.

CHAPTER 5 WASTEWATER FLOW

5.4 Wastewater strength

Subsurface wastewater disposal systems must be used only for residential strength wastewater. Wastewater exceeding the limits for residential strength wastewater must be pretreated to residential strength prior to discharging to DEQ-4 systems. Effluent from recreational vehicle holding tanks have BOD₅ levels as high as 15 times that of residential strength wastewater and must be pretreated accordingly. High strength waste must be pretreated with ~~recirculating sand filters and aerobic treatment units or other~~ systems specifically designed to reduce high strength wastewater to residential strength wastewater. For design, construction, operation and maintenance of systems that treat high strength wastewater, please refer to the Onsite Wastewater Treatment Systems Manual, EPA/625/R-00/008, February 2002.

CHAPTER 6 DESIGN OF SEWERS

- 6.2.1 Only wastewater ~~must~~ may be placed into the sewer system. Rainwater from roofs, streets, and other areas, as well as ground water from foundation drains, ~~and back flush water from water softeners~~ must be excluded. Also, see Chapters 7 and 8 for special conditions placed on water softeners and other water treatment devices.

CHAPTER 7 SEPTIC TANKS

7.1 General

All wastewater must discharge into the septic tank.

Roof, footing, garage, surface water drainage, ~~backwash water from water softeners~~, and cooling water must be excluded.

The wastewater (backwash) from water softeners may only be discharged to a wastewater treatment system if the installed water softener:

- (A) regenerates using a demand-initiated regeneration control device; and
 (B) is only connected to interior plumbing for potable water usage and not to exterior irrigation water lines.

Wastewater from water treatment devices including water softeners, iron filters and reverse osmosis units may not be discharged into an aerobic, nonstandard (excluding elevated sand mounds, intermittent sand filters and recirculating sand filters), or proprietary on-site wastewater treatment system unless the quality and quantity of discharge meets the recommended usage, operation and maintenance specifications of the designer or manufacturer of the system. If such specifications are not available, then approval for the discharge must be obtained from the reviewing authority.

Wastewater from water treatment devices including water softeners, iron filters and reverse osmosis units may be discharged to a dry well, a separate drainfield with pipe or gravelless chambers or onto the ground if not prohibited by other regulations.

The septic tank must be located where it is readily accessible for inspection and maintenance.

CHAPTER 8 STANDARD ABSORPTION TRENCHES

8.1 General

The satisfactory operation of the wastewater treatment system is largely dependent upon proper site selection and the design and construction of absorption trenches.

All new and replacement drainfields that receive wastewater discharged from water treatment devices including water softeners, iron filters and reverse osmosis units must be designed to adequately dispose of the additional flow. The sizing of absorption systems is addressed in Section 8.4.2.

Discharge of wastewater from water softeners into absorption trenches in clay soils with shrink/swell properties could result in premature system failure. Area-specific information on potential adverse impacts should be obtained from local health officials before connecting water softener backwash lines to on-site wastewater treatment systems with absorption trenches in clay soils with shrink/swell properties.

CHAPTER 8 STANDARD ABSORPTION TRENCHES

TABLE 8-1 (Residential)

Texture	Square feet for three bedroom (ft²)	Estimated Perc rate (min/in)	Application rate (gpd/ft²)
Gravelly sand or very coarse sands (a)	375	< 3 (a)	0.8(a)

Loamy sand, coarse sand	375	3 - < 6	0.8
Medium sand, sandy loam	500	6 - <10	0.6
Fine sandy loam, loam, silt loam	600	10 - <16	0.5
Very fine sand, sandy clay loam	750	16 - <31	0.4
Clay loam, silty clay loam	1000	31 - <51	0.3
Sandy clay, clay, or silty clay	1500(b)(c)	51 - <121	0.2
Clays, silts, silty clays (soil is reported throughout the soil profile) (USE EVTA BED)	2000(d)	= 121	0.15
Clays or silts, pan evaporation rates do not allow for EVTA use		= 121	NP

- (a) If the soil for 3 feet below the infiltrative surface ~~contains more than 15 percent gravel~~ is gravelly sand or very coarse sands, or there is less than 6 feet separation between the bottom of the trench and a limiting layer, the trench must be ~~sand-lined and~~ pressured-dosed or other treatment provided as approved by the reviewing authority. If the soil for 3 feet below the infiltrative layer is very gravelly sand or coarser textured, the trench also must be sand-lined or other treatment as approved by the reviewing authority.
- (b) Pressure distribution will be required if more than 500 lineal feet (or 1000 square feet) of distribution line is needed.
- (c) Comparison of soils profile report, percolation rate, and USDA soils report will be used to select applicable square footage.
- (d) Square footage is increased because the trench sidewall is not available in EVTA bed systems.
- NP – Not permitted

TABLE 8-2 (Nonresidential Facilities)

Texture	Square feet for 100 gpd (ft ²)	Estimated Perc rate (min/in)	Application rate (gpd/ft ²)
Gravelly sand or very coarse sands (a)	125	< 3 (a)	0.8 (a)
Loamy sand, coarse sand	125	3 - < 6	0.8
Medium sand, sandy loam	167	6 - <10	0.6
Fine sandy loam, loam, silt loams	200	10 - <16	0.5
Very fine sand, sandy clay loam	250	16 - <31	0.4
Clay loam, silty clay loam	333	31 - <51	0.3
Sandy clay, clay or silty clay	500(b)(c)	51 - < 121	0.2
Clays, silts, silty clays (soil is reported throughout the soil profile) (USE EVTA BED)	667 (d)	= 121	0.15
Clays or silts, pan evaporation rates do not allow for EVTA use	NP	= 121	NP

- (a) If the soil for 3 feet below the infiltrative surface ~~contains more than 15 percent gravel~~ is gravelly sand or very coarse sands, or there is less than 6 feet separation between the bottom of the trench and a limiting layer, the trench must be ~~sand-lined and~~ pressured-dosed or other treatment provided as approved by the reviewing authority. If the soil for 3 feet below the infiltrative layer is very gravelly sand or coarser textured, the trench also must be sand-lined or other treatment as approved by the reviewing authority.
- (b) Pressure distribution will be required if more than 500 lineal feet (or 1,000 square feet) of distribution line is needed.
- (c) Comparison of soils profile report, percolation rate, and USDA soils report will be used to select applicable square footage.
- (d) Square footage is increased because the trench sidewall is not available in EVTA bed systems.
- NP – Not permitted

CHAPTER 12 SAND-LINED ABSORPTION TRENCHES

12.1 Design

Trenches must be lined with a minimum of 12 inches of fine to medium sand or loamy sand below the constructed absorption system. For rapid permeability situations, the system is to be sized in accordance with Chapter 98 for the soils with percolation rates faster than 3 minutes per inch. For slow permeability situations, the system is to be sized according to the percolation rate of the soils below the trench in accordance with Chapter 98. Where systems are placed in soils with a percolation rate faster than 3 minutes per inch and the underlying soil is gravelly sand or very coarse sands, or the depth to a limiting layer seasonally high ground water is less than 6 feet from the bottom of the ~~drain-rock trench~~, the system must be designed using pressure distribution or other treatment provided as approved by the reviewing authority. If pressure distribution is not used, the side walls of the trench must also be sand-lined a minimum of 6 inches to a point 2 inches above the pipe. As an alternative to placing sand on the side walls of the trench, a 24-inch wide trench with gravity distribution may be constructed with the sand placed such that the elevation of the sand at the center of the trench is at least 6 inches lower than the sand at the edge of the trench (i.e., form a V-ditch with the sand). The sand at the center of the trench must still be at least 12 inches in depth.

CHAPTER 17 RECIRCULATING TRICKLING FILTERS

17.2.6 The method of recirculation and recirculation rate must be discussed and justified. The liquid capacity of the recirculation tank must be at least 1.5 times the daily design wastewater flow. The recirculation tank must meet the same material and construction specifications as a septic tank. The minimum liquid level in the recirculation tank must be at least 80 percent of the daily flow at all times during the 24-hour daily cycle. The reviewing authority may require systems with large surge flows to have recirculation tanks sized based on the estimated or actual surge flow volume.

CHAPTER 20 AEROBIC WASTEWATER TREATMENT UNITS

20.3.4 Advanced treatment (level ~~H~~ 2)

20.3.4. 1 Unless otherwise addressed by rule for level 2 treatment, ~~If~~ the aerobic treatment unit is intended to attain a higher level of treatment than a septic tank, monitoring data must be submitted from at least three existing systems operating in similar climates and treating wastewater similar in characteristics to that to be treated. Monitoring must include at least six cumulative years of data, with one system being in operation at least three years. Minimum data submitted must include information on time to reach steady state conditions, required maintenance and operation, average daily

flow, and influent values for each parameter (if other than residential strength wastewater), and effluent values for each parameter. Sample analysis is to be done by an independent laboratory.

CHAPTER 22 EXPERIMENTAL SYSTEMS

22.5 Advance treatment

- 22.5.1 Unless otherwise addressed by rule for level 2 treatment, ~~If~~ the experimental system is intended to attain a higher level of treatment than a septic tank, monitoring data must be submitted from at least three existing systems operation in similar climates and treating wastewater similar in characteristics to that to be treated. Monitoring must include at least six cumulative years of data, with one system being in operation at least three years. Minimum data submitted must include information on time to reach steady-state conditions, required maintenance and operation, average daily flow, and influent and effluent values for each parameter. Sample analysis is to be done by an independent laboratory.